SAN FRANCISCO WATER DEPARTMENT

REPORT FOR FISCAL YEAR

1979-1980

CITY AND COUNTY OF SAN FRANCISCO

DIANNE FEINSTEIN - MAYOR

PUBLIC UTILITIES COMMISSION

Peter McCrea	President
John M. Sanger	Vice President
H. Welton Flynn	Commissioner
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David R. Scott	Commissioner

REPORT OF THE

SAN FRANCISCO WATER DEPARTMENT

FISCAL YEAR 1979-80

EUGENE J. KELLEHER
GENERAL MANAGER
AND CHIEF ENGINEER

THE PICTURE ON THE FRONT IS

SAN ANDREAS DAM AND RESERVOIR
(Completed in 1870)

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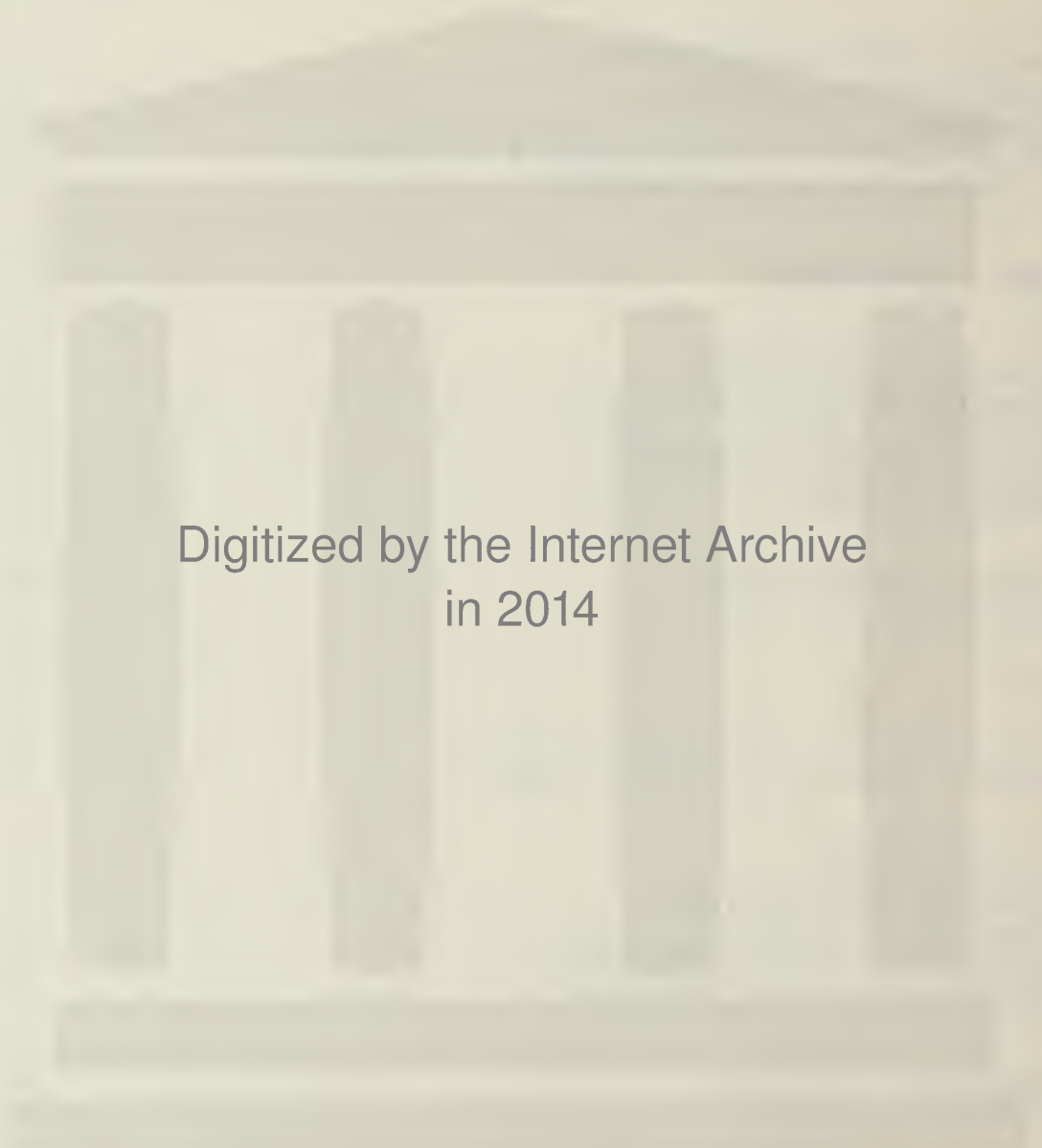

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GENERAL MANAGER'S REPORT

AND

FISCAL YEAR 1979-80 HIGHLIGHTS

GENERAL MANAGER'S REPORT

As a municipal utility owned and operated by the City and County of San Francisco, the Water Department is under a public mandate to deliver to all consumers a safe potable water in adequate quantity; to comply with all applicable federal and state regulations for water quality and public safety; to equitably charge and collect for water services; to provide for the needs of the present and future through continuous planning and improvements; and to conduct all departmental operations efficiently at reasonable cost.

In carrying out this mandate the Water Department serves water to an estimated one and three quarter million people within the City and County of San Francisco, most of the urban area of San Mateo County, the Cities of Palo Alto, Mountain View, Sunnyvale and Milpitas in northern Santa Clara County, and the Hayward, Sunol and Fremont areas in southern Alameda County.

In all its operations the Water Department is entirely self-supporting. All operations, maintenance, improvements, taxes, bond interest and redemptions including the original bond issue for purchase of the Spring Valley Water Company were paid for out of revenues.

WATER CONSUMPTION

The Department in preparing its budget for Fiscal Year 1979-80 based its estimated revenue from water sales on the assumption that sales would be 91 percent of pre-drought levels. Actual deliveries for 1979-80 were 90 percent of pre-drought usage but the revenue received from water sales was one percent below the Department's estimate. This resulted in a $412,000 reduction in water sales revenue from that estimated for 1979-80, which loss had to be absorbed from the Department's unappropriated revenue.

The discrepancy between water deliveries and water sales resulted from the difference in water consumption inside and outside San Francisco. In the suburban area water deliveries were 99 percent of normal while in San Francisco deliveries were only 78 percent of normal. Since the unit cost of water in San Francisco is higher than it is in the suburban service area, the overall unit price of water sold was less than anticipated. The fact that customers in San Francisco continue to use water at 78 percent of pre-drought levels even though water is plentiful at the present time can be attributed to the excellent water conservation habits that our customers developed during the recent drought and the sewer charge. Our commercial and industrial customers who adopted

water saving measures during the drought are continuing to utilize most of these measures to conserve water and reduce their monthly water and sewer charges. The voluntary water conservation program instituted by the Public Utilities Commission will continue as an ongoing program to promote water conservation in the entire Water Department service area.

CAPITAL PROGRAM

The San Francisco Water Department service area includes not only San Francisco, but almost all of the Peninsula cities in San Mateo County and other South Bay communities in Santa Clara and Alameda Counties. Suburban consumption, which represents about 64.5 percent of the total system consumption, increased by 5 percent while in San Francisco consumption increased by 4 percent over the previous year. While system-wide consumption was only 90 percent of pre-drought use, it is apparent that consumption will continue to increase especially in the suburban counties thereby creating a need for future capital expenditures to meet the rise in consumption.

For 1979-80 the Public Utilities Commission approved $1,971,000 for Capital Projects and $3,897,000 for Facilities Maintenance, an increase of $71,000 and $496,000 respectively in these two budgetary items. The rapid rise in construction costs during the year resulted in a decrease in the number of distribution mains that could be replaced in San Francisco with available funds. Funds for this purpose must be increased substantially in the future to maintain the 50-year main replacement program in San Francisco at a satisfactory level.

RATE INCREASE

Pursuant to public hearing, the Public Utilities Commission adopted a revised Schedule of Rates to be charged by the San Francisco Water Department for fire services in San Francisco. This action was taken to correct inequities that have historically existed between monthly service charges established for domestic services and those established for fire services. Previously all fire service customers were charged the same service charge, $8.35 per month, regardless of the size of the service and delivery capability. The revised fire service rates parallel domestic service charges for installations sized from 5/8 inch to 2 inches. Rates for fire services 3 inches and larger were established at $5.00 per month for each inch in size.

COLLECTION OF UTILITY TAX, INDUSTRIAL WASTE SURCHARGE, AND SEWER SERVICE CHARGE

Under City Ordinances the Water Department is charged with the responsibility of collecting a Utility Tax and a Sewer Service Charge.

Utility Tax collections are placed in the General Fund. Funds collected under the Sewer Service Charge are deposited in a special fund under the jurisdiction of the Department of Public Works.

Taxes and charges collected during 1979-80 were:

Utility Tax	$ 823,664
Sewer Service Charge	32,596,753
	$33,420,417

STATE AID AND FEDERAL AID

During 1979-80 no Federal or State monetary aid was received.

Eugene J. Kelleher

HIGHLIGHTS

Water Supply

For 1979-80 the run-off locally was 37.1 billion gallons, which is about 85 percent above the 40-year average; in the Sierras the run-off was above normal. San Francisco's total water storage on June 30, 1980 was 281.6 billion gallons, which represents a supply of over three years at the current level of usage.

The total water consumption for the system was 89.9 billion gallons or 90 percent of the usage during the pre-drought year of 1975-76. Consumption in San Francisco was 32 billion gallons or 78 percent of that used during the pre-drought year 1975-76 and in the suburban area of the system consumption was 58 billion gallons or 99 percent of pre-drought usage.

Commercial Division

The Division reorganization was completed with a consolidation of operating units and a realignment of supervisory staff.

The lien system was placed into full operation with noticeable reductions in both size and numbers of delinquencies.

The resultant decrease in field collections on delinquent bills allowed the development of a stepped up "no-go" (non-recording) meter replacement program which allows the capturing of revenues not collected in the past.

Energy Conservation Office

The Assistant Manager of the Commercial Division, in addition to normal duties, is functioning as an energy coordinator for the Mayor's Conservation Task Force. Staff consists of one Staff Assistant II.

The energy monitoring report was completed in May, 1980. The City's management and operational personnel will now receive, on a monthly basis, complete information on all natural gas and electricity usage with comparisons to prior months and years.

The City, through the Mayor's Office, has received a total of $149,000 in grant funds for energy conservation. Management of these grants has been transferred to the Public Utilities Commission.

Water Quality

With the knowledge that asbestos fibers occur naturally in our waters and that aggressive waters can contribute to asbestos from concrete asbestos pipe, an increase in the Langlier and Aggressive Corrosion Indexes has been initiated on waters where such facilities are in operation. The Department continued to optimize turbidity removal

at its filtration plants. A turbidity test can be a surrogate for the much more expensive and difficult asbestos electron microscope identification.

Main Leaks and Breaks

In Fiscal Year 1979-80 the City Distribution Division repaired a total of 269 leaks or breaks in water mains. Of this total, 113 were breaks in cast iron mains and 29 were leaks in steel or wrought iron pipes. The operating forces were able to hold the interruption of service and inconvenience to the public to a minimum by prompt and efficient action.

A number of main breaks or interruption to services were caused by the contractors performing work under the Sewer Consolidation Program.

There were 28 instances of main breaks caused by contractors working in the vicinity of our main.

Interdivisional Personnel Training

Deriving its impetus from the major disaster program of the City this year, the interdivisional training program was reinstituted so that a reservoir of personnel could be developed to respond to emergencies in other divisions.

GENERAL WATER SUPPLY INFORMATION

DELIVERY FOR CONSUMPTION

In addition to serving San Francisco, the Water Department supplies water to most of the urban areas of San Mateo County; to the Cities of Palo Alto, Mountain View, Sunnyvale and Milpitas in northern Santa Clara County; and to the Hayward, Fremont and Sunol areas in southern Alameda County.

Approximately 88.7 percent of the water delivered to consumers was imported from Hetch Hetchy and the balance from Bay Area sources.

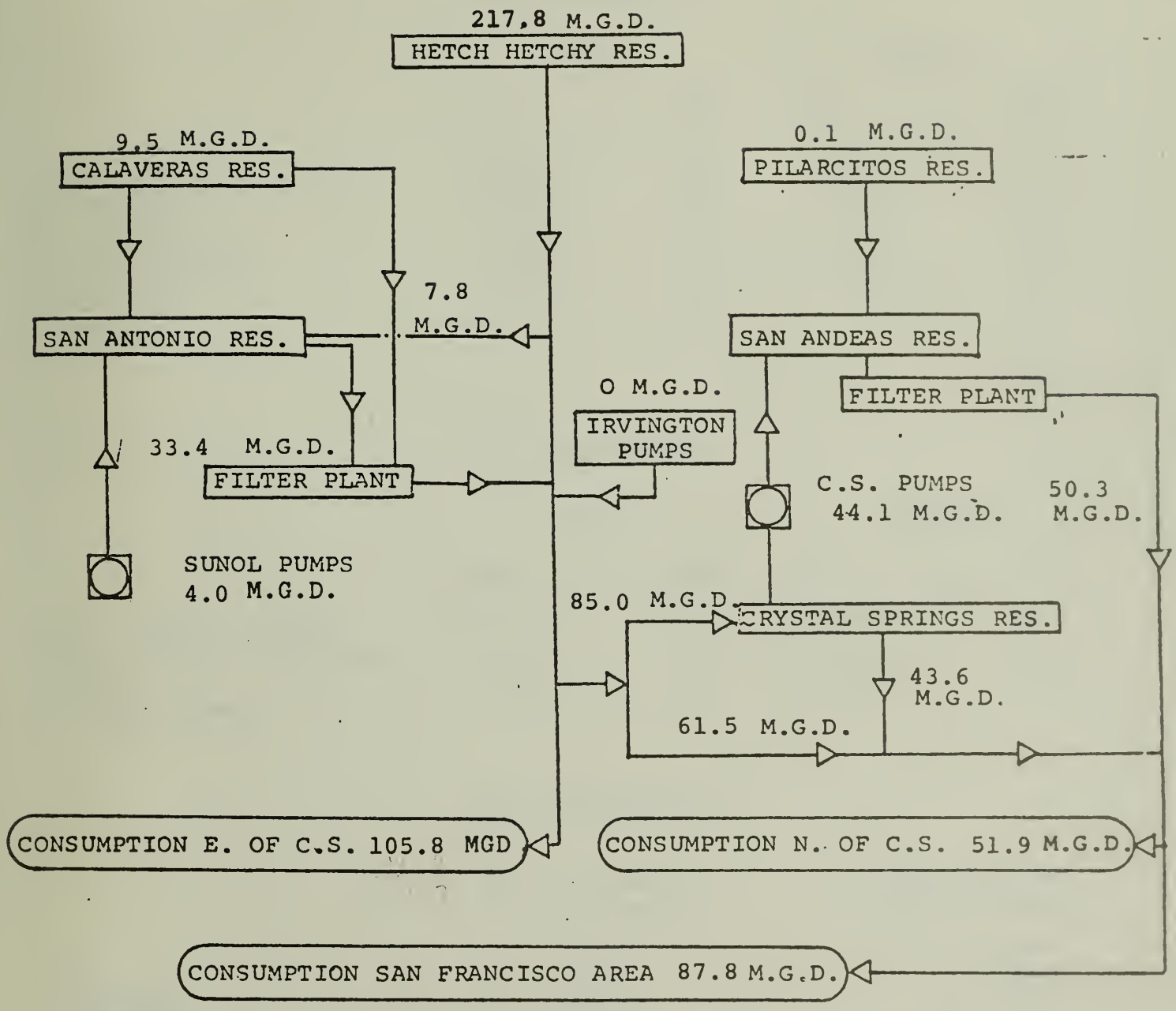
DELIVERIES FOR CONSUMPTION

1979 - 1980

	MGD Average	Percent
From Hetch Hetchy	217.8	88.7
From Alameda and Peninsula Sources	27.8	11.3
TOTAL	245.6	100.0

TRANSMISSION

1979-80 AVERAGES



TOTAL SUBURBAN	157.8	M.G.D.
SAN FRANCISCO	87.8	M.G.D.
SYSTEM TOTAL	245.6	M.G.D.

WATER PRODUCTION, TRANSMISSION AND CONSUMPTION

WATER PRODUCTION

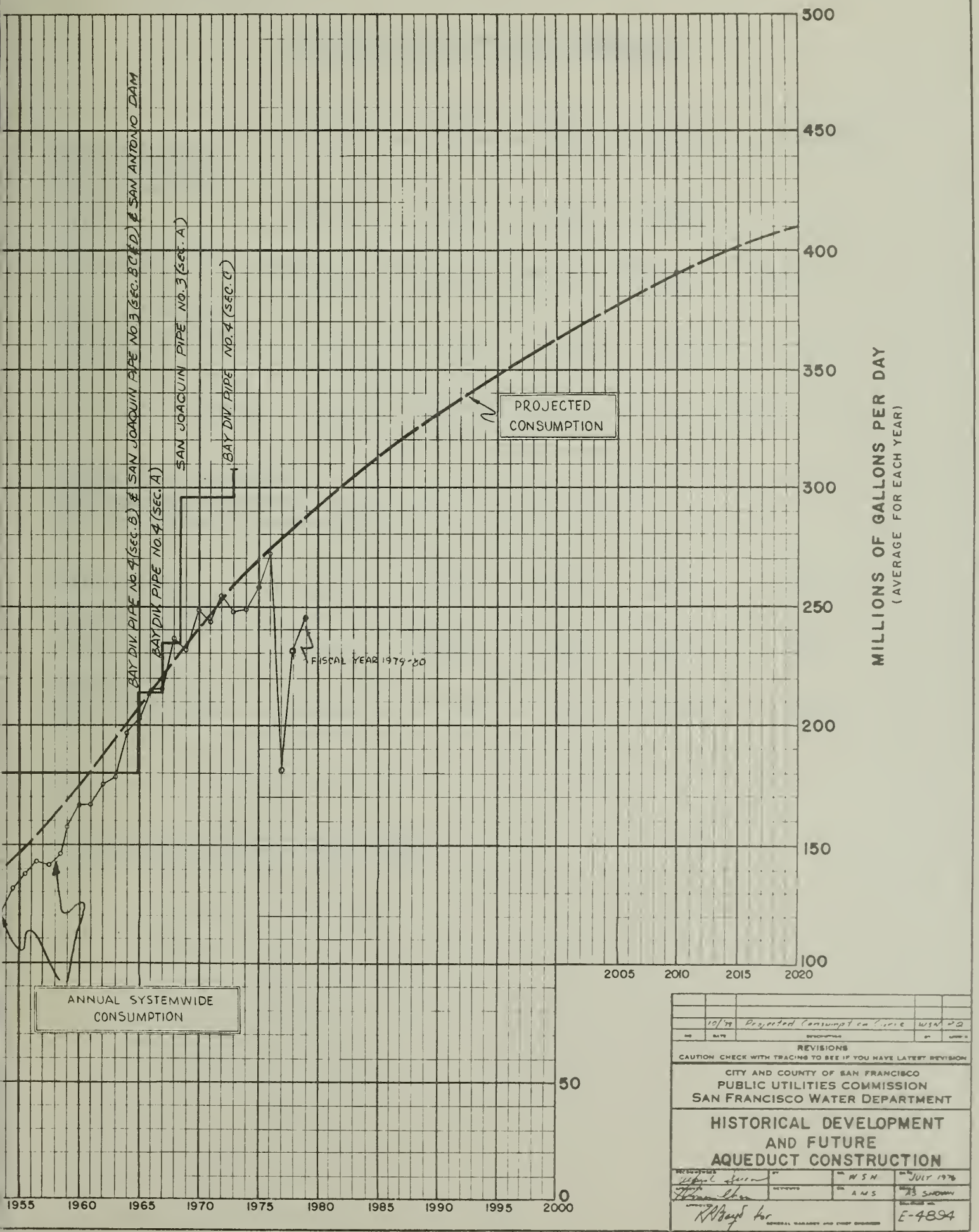
	1978-79		1979-80	
	MG	MGD	MG	MGD
Sunol Filter Galleries	1,920.7	5.3	1,712.0	4.7
Calaveras	7,306.9	20.0	3,468.1	9.5
San Antonio	661.9	1.8	543.6	1.5
Crystal Springs	4,001.2	11.0	437.9	1.2
San Andreas	976.4	2.7	2,408.9	6.6
Pilarcitos	1,057.8	2.9	41.0	.1
		43.7		23.6

WATER IMPORTATION

	1978-79		1979-80	
	MG	MGD	MG	MGD
Hetch Hetchy Sources	75,399.3	206.6	69,956.0	191.1
Sunol Valley Filtration Plant	8,217.9	22.5	12,225.9	33.4
Irvington Pumps	-0-	-0-	-0-	-0-

WATER CONSUMPTION

	Million Gallons Per Day	Increase over Previous Year
City	87.79	+ 5.7 MGD
Suburban	157.80	+ 9.6 MGD
Systemwide	245.59	+ 15.3 MGD



	10/79	Projected Consumption Curve	WSN	JJ
NO.	DATE	DESCRIPTION	BY	APPD.

REVISIONS
CAUTION CHECK WITH TRACING TO SEE IF YOU HAVE LATEST REVISION

CITY AND COUNTY OF SAN FRANCISCO
PUBLIC UTILITIES COMMISSION
SAN FRANCISCO WATER DEPARTMENT

HISTORICAL DEVELOPMENT AND FUTURE AQUEDUCT CONSTRUCTION

RECOMMENDED	BY	WSN	JULY 1979
APPROVED		ANS	AS SHOWN
APPROVED			E-4894

PER CAPITA USE IN SAN FRANCISCO

	1940	1950	1960	1970	1979-80
Average Daily Consumption in San Francisco (MGD)	47.9	68.9	80.7	98.9	87.8
San Francisco Population	634,536	775,357	740,316	715,674	660,000
Average Daily Use Per Capita (Gallons)	76	89	109	138	133
Classes of Consumers (Percentage of Total San Francisco Consumption):					
Residential	39.4	37.7	39.1	36.5	35.4
Commercial* & Industrial	51.8	54.5	52.4	54.5	52.5
Municipal & Miscellaneous	8.8	7.8	8.5	9.0	12.1

*Commercial includes apartments.

REVENUE AND EXPENDITURE

REVENUE

The Water Department is entirely self-supporting. All operating costs, taxes, capital costs, bond interest and bond redemption are paid from revenues. In addition, the Department furnishes free water to other San Francisco City departments that are tax supported.

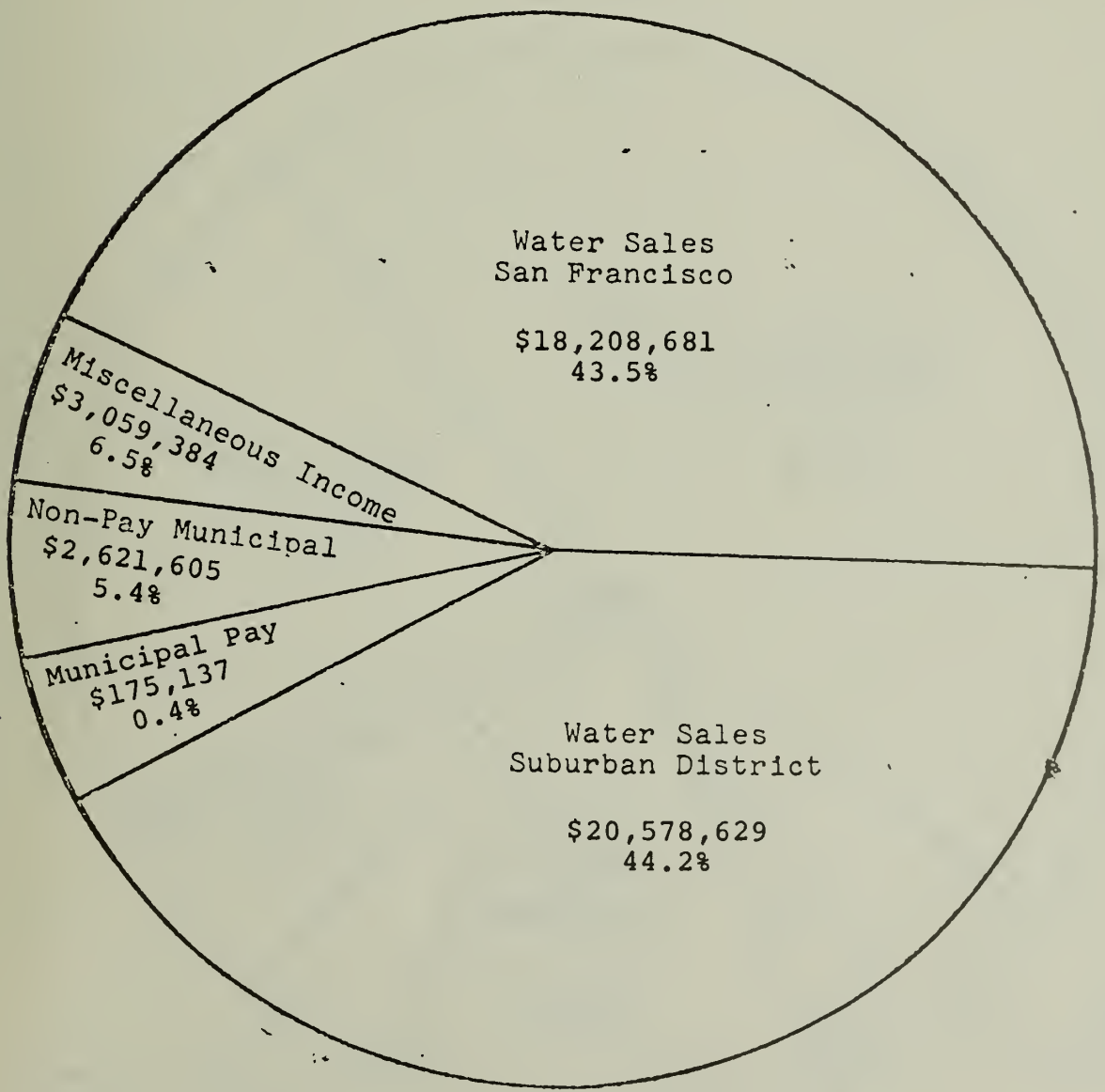
Water sales were 18.24 percent more than for the previous year. Net sales in San Francisco produced 49.6 percent of the water sales revenue, with the balance of 50.4 percent coming from deliveries outside of the City.

	Metered Quantities	Revenue
San Francisco	35.4%	49.6%
Suburban	64.6%	50.4%

Most suburban sales are to other agencies, who in turn resell the water through their own distribution systems.

SOURCE OF INCOME

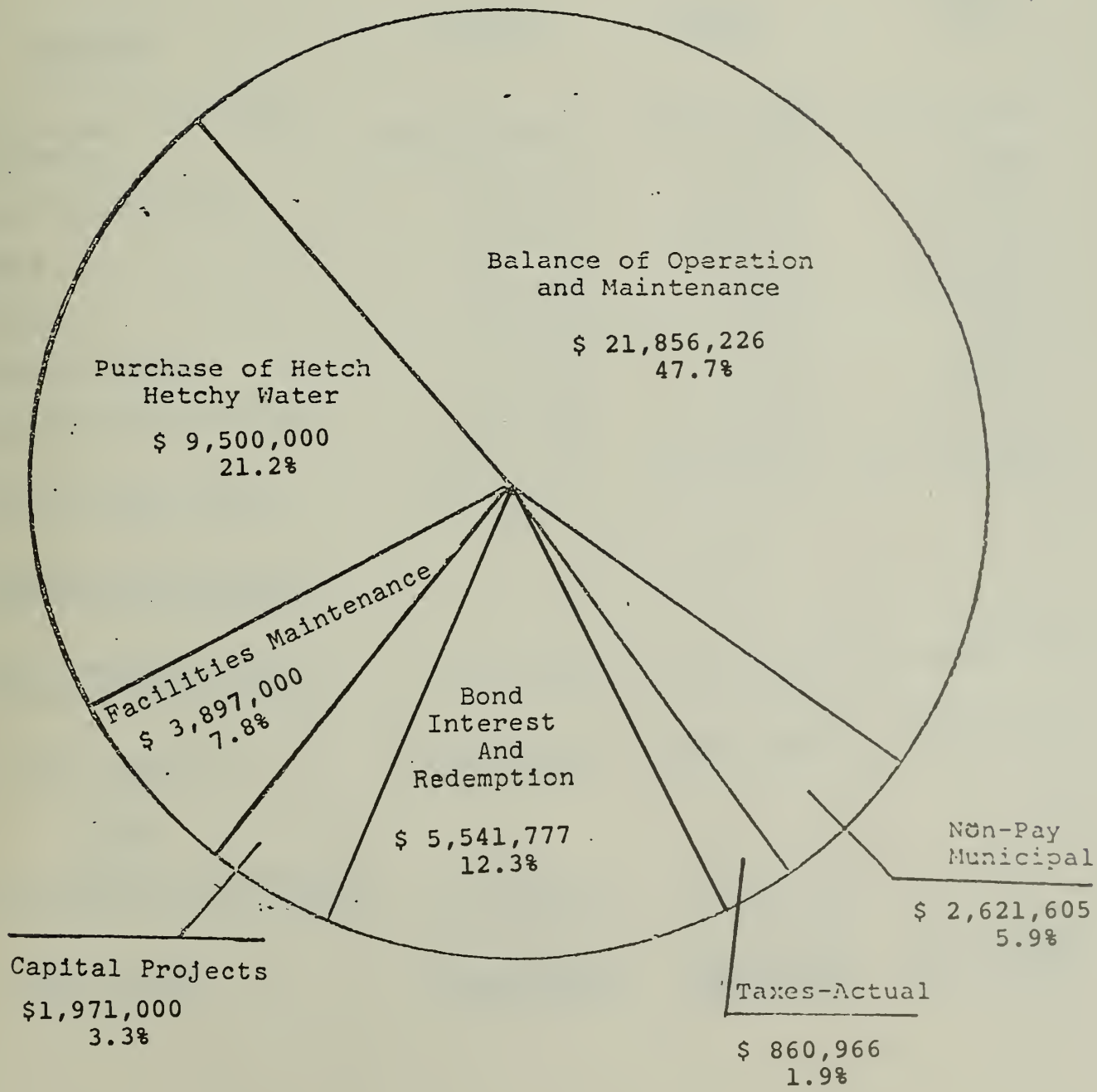
$46,778,161
100%



1979-80

DISPOSITION OF INCOME

$44,776,200
100%



SAN FRANCISCO WATER DEPARTMENT

COMPARISON OF ESTIMATED AND ACTUAL RECEIPTS
FISCAL YEAR 1979-1980

RECEIPTS

REVENUE	BUDGET	ACTUAL	+ OVER - UNDER
Collections from Sale of Water	$39,200,000	$38,551,682	-$ 648,318
New Installations	250,000	307,565	57,565
Rents	750,000	1,420,710	670,710
Interest	180,000	308,353	128,353
Sale of Walnuts	25,000	31,823	6,823
Miscellaneous Revenue	180,000	350,766	170,766
TOTAL GROSS REVENUE	$40,585,000	$40,970,899	-$ 385,899
RECEIPTS BY TRANSFER			
From Unappropriate Revenue (Prior Year)	$ 1,445,804	-$ 2,242,218	-$3,688.022
TOTAL RECEIPTS	$42,030,804	$38,728,681	-$3,302,123
LESS			
Allocation of Revenue to Hetch Hetchy Project	$ 9,500.000	$ 9,500,000	$ --0--
TOTAL BUDGET	$32,530,804	$29,228,681	$3,302,123

DISTRIBUTION AND CONSUMPTION

SYSTEMWIDE METERED DELIVERIES

Within the City of San Francisco the Department distributes, delivers and meters water directly to consumers. Outside of San Francisco, water is delivered and metered from transmission mains to water purveyors who distribute to customers in their service areas.

METERED DELIVERIES

1979 - 1980

	Million Cubic Feet Year	M.G.D.	Percent	Increase Over Prior Year
City*	3,848.0	78.7	35.5	5.4%
Suburban**	6,998.8	143.0	64.5	5.1%
Systemwide	10,846.8	221.7	100.0	4.7%

* Includes 306.6 million cubic feet (2,282 million gallons) used by municipal non-pay accounts.

** Includes 119.0 million cubic feet (882 million gallons) used by suburban non-pay accounts.

TOTAL WATER SALES

FISCAL YEAR 1979-80

	Metered Del. (1) 100 Cu. Ft.	Charges $	
(TOTAL FOR SAN MATEO, SANTA CLARA & ALAMEDA COUNTIES) = TOTAL SUBURBAN	69,988,000	21,008,319	
TOTAL SAN FRANCISCO	38,480,000	20,576,470	
TOTAL FOR SAN FRANCISCO WATER DEPARTMENT SYSTEM	108,468,000	41,584,789	(2)
SUBURBAN NON-PAY MUNICIPAL	1,190,000	429,689	
SAN FRANCISCO NON-PAY MUNICIPAL	3,066,000	1,958,707	
TOTAL NON-PAYING	4,256,000	2,488,396	

(1) Metered delivery does not include system loss which for 1979-80 amounted to 9.0 percent of total water sales.

System losses consists of leakage, losses due to pipe breaks, underregistration of meters, water used at hydrants that is not billed (fire use in San Francisco averaged 0.03 mgd), blowoff water, water used for Water Department operating purposes, evaporation from distribution reservoirs and other similar losses. Pleasanton well field agricultural use water is not included in the tabulation of water sold.

(2) Represents total billing for water sold without adjustment for allowances, etc.

WATER SOLD IN SUBURBAN AREA
FOR FISCAL YEAR
1979-1980

SAN MATEO COUNTY

MUNICIPAL UTILITIES	CUBIC FEET	CHARGES
City of Redwood City	411,200,000	$ 1,196,958.00
City of Burlingame	207,064,200	625,983.36
Belmont County Water District	194,183,100	583,848.91
Estero Municipal Improvement District	180,736,600	530,577.21
City of Menlo Park	167,525,200	514,308.92
North Coast County Water District	144,136,000	423,587.59
Town of Hillsborough	149,038,400	461,716.83
City of Daly City	154,675,800	479,496.02
City of Millbrae	125,715,900	385,977.39
City of San Bruno	111,147,900	360,141.59
East Palo Alto Water District	66,538,500	204,015.92
Airport	49,972,100	187,561.94
Westborough County Water District	46,323,900	141,930.52
Coastside County Water District	19,603,100	67,963.88
City of Brisbane	11,784,100	37,144.93
Dimond Public Utility District	10,817,300	40,019.38
Guadalupe Valley Municipal Improvement Dist.	10,983,400	42,845.21
Skyline County Water District	5,262,900	20,369.98
Los Trancos County Water District	2,352,000	9,997.34
Palomar Park County Water District	1,770,900	7,800.04
Cordilleras Mutual Water Association	247,000	1,460.93
TOTAL MUNICIPAL UTILITIES	2,071,073,300	$6,324,210.89
PRIVATE UTILITIES		
California Water	1,415,700,200	4,212,283.89
TOTAL PRIVATE UTILITIES		
Other Water Sold	47,348,300	197,965.27
TOTAL SAN MATEO COUNTY	3,534,126,300	$10,734,460.05

WATER SOLD IN SUBURBAN AREA
FOR FISCAL YEAR
1979-1980

SANTA CLARA COUNTY		
MUNICIPAL UTILITIES	CUBIC FEET	CHARGES
City of Palo Alto	699,181,300	$ 2,043,588.63
City of Sunnyvale	507,141,200	1,478,874.09
City of Mountain View	471,005,300	1,346,610.36
City of Milpitas	251,477,100	734,834.49
Purissima Hills County Water Dist	65,796,300	202,149.75
Santa Clara Water Department	68,654,400	211,484.12
City of San Jose	42,859,900	130,594.69
TOTAL MUNICIPAL UTILITIES	2,106,115,500	$ 6,148,136.13
Moffett Field	60,954,200	179,763.08
Other Water Sold	122,106,400	374,109.62
TOTAL SANTA CLARA COUNTY	2,289,176.100	6,702,008.83
ALAMEDA COUNTY		
MUNICIPAL UTILITIES		
Hayward Municipal Water System	678,946,000	$ 1,949,411.12
Alameda County Water District	337,231,100	1,036.791.50
TOTAL MUNICIPAL UTILITIES	1,016,177.100	$ 2,986,202.62
Other Water Sold	40,271,300	156,239.72
TotaL ALAMEDA COUNTY	1,056,448,400	3,142,442.34
TOTAL WATER SOLD SUBURBAN AREA	6,879,751,300	$ 20.578.911.22

CITY DISTRIBUTION DIVISION

Responsibilities and Functions

This Division is responsible for operating and maintaining all pump stations in the City, the hilly terrain of the City requires pumping to the various higher pressure zones. The larger pump stations pump water to the reservoirs from which water is distributed. The smaller pump stations are usually hydropneumatic facilities that serve small areas from air pressurized tanks.

The Division operates and maintains many reservoirs and tanks in the City to distribute water to consumers.

The meter program includes removing and resetting, disconnecting and reconnecting, inspection, testing, and repairs of meters.

The maintenance of service programs includes testing, inspecting, restoring, rearranging, repairing, and replacement of water services.

The maintenance of mains program involves replacement and reconstruction of water distribution mains in the City.

Additionally, the responsibility for maintaining the Department's physical plant, operating equipment, and automotive equipment belong to the major shops operated by this Division. The Division also operates the Department's central warehouse and pipe yard.

The field forces work on new construction of mains and services, maintenance of facilities, and emergency services. A Department's gateman responds to all fires of two alarms or more to regulate valves to provide increased water pressure as needed.

Major Facilities

City Corporation Yard: includes Division's administrative office, central control headquarters; machine, meter, auto, carpenter and welding shops; truck and auto storage; warehouse and pipe yard.

13 reservoirs and large tanks with a total capacity of 414 million gallons

47 structures

7 small tanks

4 pump stations with capacity from 10 to 50 million gallons per day each

17 small pump stations

4 pump stations with capacity from 10 to 50 million gallons per day each

17 small pump stations

Approximately 1,200 miles of water mains

62.6 acres of landscaping

Personnel Resources

Office staff	21
Shops	53
Field	139
CETA	6*
Total	219

*laid off in March 1980

DIVISIONAL HIGHLIGHTS

Main Leaks and Breaks

Main breaks and leaks continued at a high rate in the fiscal year 1979-80. This Division responded to 269 reports of leaks in the street and repaired a total of 142 main leaks. Of the total, 113 were main breaks on cast iron mains and 29 were leaks on steel and wrought iron mains. A trend being noticed is the increased number of leaks on 1½" and 2" galvanized mains.

The continuing program to recondition steel mains and installing sacrificial anodes whenever a steel main is exposed has decreased the number of leaks in the transmission mains.

Interdivisional Personnel Training

Deriving its impetus from the major disaster program of the City, this year saw the reinstitution of the interdivisional training program so that a reservoir of personnel could be developed to respond to emergencies in other divisions.

Computer Control Center

The Computer Control Center was relocated this year from the Administration Building at the Corporation Yard to the Lake Merced Pumping Station. The resultant increase in efficiency was obvious in that even though the stationary engineers suffered a shortage of personnel, the staff was more readily able to cope with the problems and still maintain the Control Center.

Reservoir and Tanks

Reservoir Cleaning:

The University Mound Reservoir South was placed back in service with the installation of the new slide gate and deflector. The work had started last year, but the long delivery date of the equipment had delayed the completion until October. While the reservoir was drained for the installation of the slide gate, it was noted that considerable quantities of spalled concrete from the roof joists had occurred and an inspection was made by the Engineering Division.

The east tank of McLaren Tanks was drained and cleaned. The tank was in excellent condition and only a small amount of sediment was found on the bottom of the tank. On the basis of the findings, it was decided to postpone cleaning the west tank.

Other reservoirs inspected and found to be satisfactory were Sutro Reservoir, North Basin of Sunset Reservoir and Lombard Reservoir. College Hill Reservoir was found to have some debris. The condition of the reservoir was excellent and after removal of the debris by divers, it was decided that the cleaning of the reservoir could be deferred.

Lombard System Expansion

Since the expansion of the Lombard Service Area into the Marina District is scheduled for the early part of next fiscal year, tests were conducted to determine the potential problems that might be encountered. The malfunction of the regulating valves and relief valves at Scott Street caused some damage to the system. It was determined that the long period of inactivity since the regulating station was constructed had allowed sediment to clog the mechanism of the valves. Remedial measures are being taken so that the pressure change can be made as scheduled.

The meter measuring the flow from Lombard Reservoir was removed and refurbished in conjunction with replacing the 12" main in Hyde Street. In conjunction with the scheduled work, the Scott Street Regulator was tested and unnecessary piping was eliminated.

Service Renewal

A total of 3,182 services were renewed in fiscal year 1979-80, of which 329 were renewed under excavation contracts. Yard forces renewed 2,853 services. Renewal of services in restricted areas and congested areas were performed by Yard forces.

The unit costs to install services has continued to increase. Under present economic conditions and restrictive regulations as imposed by the Department of Public Works, the cost will continue on its upward spiral.

Main Flushing Program

The area flushing program was reactivated in November and except for the temporary suspension of the program for the holiday season, the Department flushed 995,600 lineal feet of mains.

Areas flushed during the year included area served by Merced Manor Reservoir and Sunset Reservoir. These areas were located in the Richmond, Sunset, Parkside and Mission Districts.

Operating Results

		1978-79	1979-80
1.	Main breaks and leaks repaired	184	113
2.	Number of services	159,279	160,265
3.	New services installed	864	894
4.	Services repaired	1,532	1,739
5.	Services renewed		
	by SFWD	2,341	3,182
	by Contract	10	0
6.	Linear feet of main flushed	623,105	995,600
7.	Individual services flushed	207	181
8.	Valves inspected (operated and checked)	6,958	4,373
9.	Number of valves	15,954	16,023
10.	Valves repaired and rebuilt	371	223
11.	Service maintenance	10,376	14,053
12.	Meters installed	3,964	3,771
13.	Meters replaced	2,716	2,517
14.	Meters repaired		
	In shop	3,088	2,421
	In field	4,119	7,065
15.	Meters in service	161,559	162,615
16.	Hydrants installed and relocated	45	7
17.	Main extensions - Feet	11,069	8,310
18.	Mains replaced - Feet	8,558	8,675
19.	Connections	27	67
20.	Leak detection survey (miles of main)	60.2	90

21. During the year the shop repaired, rebuilt, or fabricated diesel engines, motors, pumps, special pipe fittings, valve operators, etc. The auto shop performed all routine as well as major maintenance on the Department's fleet of trucks and autos.

22. Water main inventory - City Distribution System

Main inventory 7/1/79	1,183.68	miles
New main added 1979-80	6.64	"
Old main removed 1979-80	5.16	"
Main inventory 6/30/80	1,185.17	"

23. Electric Power Used, SFWD 39,810 Million KWHR; cost $1.423 million.

SUBURBAN DIVISION

Work Program: A. - Source of Supply
B. - Pumping (Suburban)
E. - Transmission and Distribution (Suburban)

Responsibilities and Functions

The responsibilities for water impoundment and transmission rest with the Department's Suburban Operations Division, which is made up of two operating parts. The Peninsula operations is responsible for facilities in San Mateo and Santa Clara Counties, the Alameda operations for facilities in Alameda County.

The principal function of the Division is to operate and maintain the transmission pipelines, pump stations and reservoirs to deliver water to our suburban customers and to San Francisco. The Division also manages the watersheds, pipeline rights-of-way, and other lands of the City.

Major Facilities Operated and Maintained

Crystal Springs, San Andreas, Pilarcitos, Calaveras and San Antonio Dams and Reservoirs. Total storage 77.8 billion gallons.

Four Bay Division pipelines, total lengths 112 miles.

Coast Range, Pulgas, and Crystal Springs Bypass Tunnels, 8.6 miles total.

Five major pipelines North of Crystal Springs to San Francisco, 126 miles.

Six pump stations. 1979-80 electric power used 15.007 million KWHR.

Millbrae Corporation Yard.

Sunol Headquarters for Alameda Division.

23,000-acre Peninsula watershed property.

38,000-acre Alameda watershed property.

Personnel Resources

Salaries	39
Crafts	84
Total	123

DIVISIONAL HIGHLIGHTS

There were very few leaks of consequence on the transmission pipelines during the year. All were repaired with no interruption in service. All but two were the result of electrolytic action on the metal of the pipes.

The "Hazardous Fire Area" designation imposed on the Peninsula watershed area by the State Department of Forestry in June, 1977 was continued until November 1, and is reimposed on June 1, of each year extending until November 1, of that year.

Vandalism and trespassing on watershed lands continues to increase. The number of trespassers evicted during the year ran into the thousands.

In addition to the major facilities, the work of Suburban Divisions is connected with the operations and maintenance of the following listed facilities and equipment:

62,000 acres of watershed and other lands. Vandalism and trespassing are increasing every year.

185 miles of all-weather roads. These are mostly gravel roads requiring periodic grading and reestablishment of drainage ditches, etc.

63 miles of property fences. Fences are periodically checked; broken or missing fences are repaired or replaced.

Over 100 miles of lease boundary fencing. Fence materials are furnished by San Francisco Water Department; installations and maintenance by lessee.

Nearly 100 miles of fire roads are maintained on the watersheds.

Ground and landscape maintenance is supplied for Peninsula and Alameda Yards, public areas of Sunol and Pulgas Water Temples, two filtration plants, pump stations, balancing reservoirs and other areas.

603 resale and retail services.

120 miles of right-of-way.

Operating Results

	Million Gallons 1978-79	Million Gallons 1979-80
WATER PRODUCTION		
Production from Peninsula Sources (includes Crystal Springs, San Andreas, and Pilarcitos)	6,035	9,296
Production from Alameda Sources (includes Calaveras and San Antonio)	8,947	27,771
Local Production Sub-Total	14,982	37,067
Received from Hetch Hetchy	76,294	69,793
TOTAL	91,276	106,870

DELIVERIES TO CUSTOMERS BY PIPELINE

	Million Gallons 1978-79	Million Gallons 1979-80
San Andreas #1	-0-	-0-
San Andreas #2	10,418	11,621
San Andreas #3	1,148	1,195
Sunset	6,001	6,219
*Crystal Springs #2	21,960	22,947
Airport from Crystal Springs #2	1,057	1,333
Bay Division Pipeline #1 & #2, Alameda County	18,431	18,979
Bay Division #1 & #2, San Mateo County	15,478	17,928
Palo Alto	10,923	10,169
Bay Division #3 & #4, Alameda County	3,366	2,315
Bay Division #3 & #4, San Mateo County	8,710	9,924

	Million Gallons 1978-79	Million Gallons 1979-80
Bay Division #3 & #4, Santa Clara County	35,768	39,967
Crystal Springs Aqueduct to Golf Course	196	198
Pulgas Canal Outfall	6	14
Alameda County--miscellaneous	1,968	1,833
Stone Dam Aqueduct	384	402
TOTALS	135,819	145,044

*Crystal Springs #2 does not include Airport consumption.

	1978-79	1979-80
Large Meters Tested	156	167
New Services	8	11
Transmission Line Leaks	20	7

Permits Issued

1	Groups	195	149
1a	No. of People	7,261	3,500
2	Cross-Country Meets	26	33
2a	No. of Participants	6,050	4,900
3	New Equestrians	83	58
4	Current Equestrians	449	555

Trespassers & Citations

1978-79	1979-80	
4,976	3,571	Trespassers evicted
71	1,679	Contact cards filled out
469	191	Citations issued

WATER QUALITY AND TREATMENT

WATER QUALITY DIVISION

Work Program: C. - Water Treatment

Responsibilities and Functions

To insure the safety and purity of the water delivered to consumers by applying the necessary treatments and by employing a systematic program of sampling and testing to verify compliance with State and Federal standards.

The Division also has the responsibility for the Department's radio communication and security.

Major Facilities

Division Headquarters and Laboratory - Millbrae Yard

Sunol Valley Water Treatment Plant - 160 MGD Capacity

San Andreas Water Treatment Plant - 80 MGD Capacity

Various Chlorination, Fluoridation, Turbidity control and Lime treatment stations.

Personnel Resources

46 employees

DIVISIONAL HIGHLIGHTS

The new Interim Primary Drinking Water Regulations (Public Law 93-523) required that the City employ additional chemists to perform numerous new tests as required by those regulations. Three water chemists were approved and two chemists were hired off the Civil Service list during 1979-80. One additional chemist was hired to fill a vacancy due to promotion.

Preparations for performing Trihalomethane analysis on the Department's various chlorinated supplies are going forward, but will not be performed until the Division moves into the new facilities.

With the knowledge that asbestos fibers occur naturally in our waters and that aggressive waters can contribute to asbestos from concrete asbestos pipe, an increase in the Langlier and Aggressive Corrosion Indexes has been initiated on waters where such facilities are in operation. Additional facilities will have to be constructed as soon as possible so that all waters can be rendered non-corrosive.

Fiscal Year Operating Results

Sunol Valley Water Treatment Plant

	1978-79	1979-80
Volume water treated	8,229 MG (22.5 MGD)	12,546 MG (34.4 MGD)
Chemicals used:		
Chlorine - inplant	203,713 lbs.	176,216 lbs.
Chlorine - pretreatment	33,987 lbs.	42,534 lbs.
Alum	981,202 lbs.	2,402,524 lbs.
Lime	421,013 lbs.	958,886 lbs.
Others	27,981 lbs.	79,156 lbs.

San Andreas Water Treatment Plant

	1978-79	1979-80
Volume water treated	12,743 MG (34.9 MGD)	18,606 MG (51.0 MGD)
Chemicals used:		
Chlorine - inplant	79,418	80,071
Chlorine - pretreatment	111,423	182,174
Alum	304,376	1,121,189
Sodium Hydroxide	401,538	756,364
Others	605,236	725,906

Million Gallons Per Day Disinfected (chlorinated)

1978-79	1979-80
300	319

Chlorination Stations

	1978-79	1979-80
Hetch Hetchy Aqueduct (Tesla Portal)	1,138,397	1,144,545
Sunol Aqueduct	4,071	8,807
Peninsula Aqueducts (*Three stations)	224,585	248,702
City Distribution (Ten stations)	70,068	69,643

Hypochlorination Station

5 Hetch Hetchy Mountain and 2 Bay Area Locations used a total 1943 gallons of 12.5% Sodium Hypochlorite Solution. 1950 gallons were used in fiscal year 1978-79.

* Includes Casey Quarry

Mains Disinfected

1978-79	1979-80
32,730 l.f.	49,550 l.f.

Fluoridation

Fluoridated water is served only to consumers north of Crystal Springs and to the City.

Fluoride treatment is applied at three fluoride stations and at the San Andreas Water Treatment Plant.

	1978-79	1979-80
Water treated	45,184 MG	51,324.21 MG
Hydrofluosilic acid used	1,251,254 lbs.	1,311,669 lbs.
Sodium Silicofluoride used	154,302 lbs.	180,549 lbs.

Corrosion Control Hetch Hetchy Aqueduct

To neutralize the corrosive action of the extremely soft Hetch Hetchy water, lime is added at the Rock River Lime Plant.

	1978-79	1979-80
Volume of water treated	75,342 MG	69,864 MG
Lime used	2,782,430 lbs.	3,320,598 lbs.

This fiscal years increased dosage of lime was occasioned by the desire to even further decrease the corrosivity level of the Hetch Hetchy water.

Reservoir Turbidity Control

Three alum treatment installations which control runoff turbidity into Crystal Springs and San Andreas Reservoirs were in use during the year. In 1975-76 the first year of the two year drought only 5,400 gallons of alum was used in these stations. By comparison 83,940 gallons of alum was used in 1979-80.

Reservoirs Algae Control

The five Bay Area Reservoirs were treated with a total of 43,700 lbs. of copper sulfate to control aquatic growth. In fiscal year 1979-80 48,200 lbs. were used. 10,200 lbs. of Citric Acid was used to enhance the algae control effectiveness of the copper sulfate treatments.

	1978-79	1979-80
Number of Customer Complaints	114	232

Sampling and Testing

During the year thousands of water samples were taken from reservoirs, transmission pipelines, and the City's Distribution system.

The Millbrae Laboratory performed the following number of tests:

	1978-79	1979-80
Chemical	31,924	39,940
Microbiological	26,631	27,921
Physical	37,493	36,817
Number of water samples	17,839	18,511

CONTRACTS

CONTRACTS

1979-80

During the fiscal year, the Engineering Division handled 21 formal construction contracts valued at $16,161,228.00. Fourteen were new contracts awarded during the year, of which 7 were completed and 7 were under construction. Seven contracts were carried over from the previous year, 6 of which were completed during the fiscal year.

The work done under formal contracts has been separated into four main categories, as follows:

No. of Contracts	Description	Total Value of Contracts
2	Additions and Betterments to Supply Transmission, treatment and miscellaneous facilities	$ 115,346.00
4	Reconstruction and Replacement of Water Facilities	234,032.00
2	Bond Fund Projects	12,628,073.00
13	City Distribution Division Replacements and Additions	3,183,777.00
	Total	$16,161,228.00

INFORMAL CONTRACTS

One informal contract was awarded for Installation of Piezometers at Sutro Reservoir.

CONTRACT DATA 1979-80

WATER DEPARTMENT CONTRACTS

CONTRACT NO.	TITLE OF CONTRACT	DIVISION	NO. OF BIDDERS	CONTRACTOR	DATE OF AWARD	DATE OF COMPLETION	PERCENT COMPLETE 6-30-80	BID PRICE	TOTAL COST TO 6-30-80
1650	San Andreas Pipeline No. 3	General	10	Underground Construction Company	2-13-80	-	4%	9,459,597.00	224,000.00
1718	Remote Control of Line Valve in Bay Division Pipeline #4 at E. Pulgas, San Mateo County	Peninsula	3	Amelco Co.	6-14-77	-	100%	24,499.00	24,499.00
1740R	Suburban Facilities	Peninsula	6	Ralph Larson & Sons, Inc.	3-27-79	-	92%	3,168,476.80	2,874,396.64
1744	12" DIM Installation in Hyde St. bet. Pacific Ave. & Greenwich St.	C.D.D.	5	W.J.Gaffney, Inc.	2-27-79	8-27-79	100%	308,970.00	303,111.85
1746R	CDD Control Room, Lake Merced Pump Station	C.D.D.	6	W.R. Thomason, Inc.	12-12-78	7-5-79	100%	19,300.00	19,300.00
1749	Painting Potrero Heights Tank	General	3	Bay Area Coatings	10-23-79	5-27-80	100%	12,800.00	12,800.00
1752	Reconditioning Outlet Pipes and Tower - Calaveras Dam	General	3	Peckham and Associates	8-14-79	-	53%	73,500.00	39,064.00
1754	6",8" & 12" DIM Installation in Homewood Place	C.D.D.	7	Dalton Const. Company	2-13-79	8-23-79	100%	108,347.50	97,179.00
1759	4" DIM Installation in Yale St. North of Wayland	C.D.D.	4	W. L. Fairey	11-27-79	5-9-80	100%	13,615.00	12,358.55
1765R	8" DIM Installation in Front St. bet. Market & Clay	C.D.D.	7	P&J Utility Company	2-26-80	-	85%	364,490.00	223,642.00

CONTRACT DATA 1979-80

WATER DEPARTMENT CONTRACTS

CONTRACT NO.	TITLE OF CONTRACT	DIVISION	NO. OF BIDDERS	CONTRACTOR	DATE OF AWARD	DATE OF COMPLETION	PERCENT COMPLETE 6-30-80	BID PRICE	TOTAL COST TO 6-30-80
1767	Excavation & Repaving for Water Service Trenches	C.D.D.	1	Lowrie Paving Co.	6-12-79	8-22-79	100%	62,300.00	67,775.90
1768	Fencing Pulgas Temple & Millbrae Yard	General	4	Anchor Fence Company	1-8-80	-	23%	90,847.00	16,950.00
1770	Repaving of Street & Sidewalk Openings for SFWD - Fiscal Year Ending 6-30-80	General	1	Pacific Pavements Co.	6-12-79	6-30-80	100%	862,000.00	862,000.00
1771	Relocation of CSPL No. 2 at Colma Creek & Orange Ave.	General	9	Alf Burtleson Constr.	11-27-79	5-2-80	100%	128,432.00	136,732.00
1772	18" Steel Main Installation in Clarendon & Laguna Honda	C.D.D.	4	W.R.Thomason	7-31-79	12-26-79	100%	306,505.00	315,026.00
1773	8" DIM Installation in California bet. 18th and 23rd Ave.	C.D.D.	8	E. Mitchell	11-13-79	3-12-80	100%	142,210.00	124,300.05
1774	8" DIM Installation in Washington bet. Laguna & Gough Sts.	C.D.D.	4	W.L. Fairey	1-8-80	4-29-80	100%	81,055.00	80,265.80
1775	12" DIM Installation in Chestnut St. and Grant Ave.	C.D.D.	7	Manuel G. Rodriques	4-7-80		31%	308,750.00	71,047.00
1776	16" DIM Installation in Eddy St. bet. Scott and Fillmore Streets	C.D.D.	6	W.R. Thomason	2-13-80	5-29-80	100%	150,335.00	150,459.35

CONTRACT-DATA 1979-80

WATER DEPARTMENT CONTRACTS

CONTRACT NO.	TITLE OF CONTRACT	DIVISION	NO. OF BIDDERS	CONTRACTOR	DATE OF AWARD	DATE OF COMPLETION	PERCENT COMPLETE 6-30-80	BID PRICE	TOTAL COST TO 6-30-80
1778	Cement Mortar Line 24" in Stanyan, Geary & Other Sts.	C.D.D.	2	Ameron,Inc.	2-13-80	-	90%	357,000.00	303,564.30
1779R	Excavation & Re-paving for Water Service Trenches Various Streets	C.D.D.	3	Bepco Inc.	4-7-80	-	31%	118,200.00	36,370.00
1788	Repaving of Street & Sidewalk Openings for Water Service Trenches for SFWD Fiscal Year Ending 6-30-81	General	2	Frank H.Mock	5-27-80	-	-	856,100.00	

LAND, LEASES, PERMITS AND PROPERTY TAXES

Work Program G: Land

Responsibilities and Functions

Negotiates and manages property and agricultural leases, permits, advises and represents management on land matters such as sale, acquisitions, property taxes, encroachments, appraisals, and litigations; field staff maintains day-to-day contact with lessees to resolve problems and protect the City rights.

Staff

Manager and office staff of two

3 field men

Services of the Director of Property staff

Divisional Highlights

In accordance with Water Department's continuing policy of seeking maximum secondary utilization of our primary watershed lands in Alameda/Santa Clara Counties, the Department engaged the professional services of A. Doyle Reed, Agricultural Economist, for analysis of the agricultural lease operations of the Land Division.

The agricultural consultant report will contain an in-depth analysis of the various facets of this Division's management and lease operation.

Besides the usual agricultural and pipeline right-of-way leases regularly processed, in the past year the Water Department granted permits or leases to several Peninsula and East Bay municipalities, for the use of our 80' wide pipeline right-of-way for bicycle, equestrian and pedestrian paths.

Furthermore, in the interest of conservation and protection of wildlife resources, approximately 115 acres of marsh land under the jurisdiction of the Water Department was leased to Fish and Wildlife Service, Department of Interior, U. S. A. at no cost.

Operating Results

		1978-79	1979-80
1.	Receipts from leases and permits	$1,184,385.06	$1,809,584.23
2.	Income from Walnuts:	35,090.45	33,257.08
3.	Number of new & renegotiated leases	16	19
4.	Number of new permits:	47	82
	Permits cancelled:	20	30
5.	Total number of current leases	75	72
	Agricultural	40	38
	Other	35	34
6.	Total number of permits	1,862	1,902
7.	Total number of acres:	31,177	30,619
	Agricultural	30,532	29,657
	Other	645	962
8.	Number of property litigation cases	6	4

FINANCIAL STATEMENTS

ACCOUNTING AND AUDITING

The accounts of the San Francisco Water Department are maintained in accordance with the requirements of the California State Public Utilities Commission and Section 3.596 of the City Charter. The accounts of the Department have been so coordinated with the Controller's system that no encumbrance or expenditure against budget estimates can be incurred without prior certification from the Controller that funds are available. As provided in Charter Section 3.305, an annual audit of the Department is made as of June 30 by a firm of certified public Accountants.

1979-80 Operating Expenses show a net increase of $5,664,632.66 as shown by the following tabulation:

Operating Revenue Deductions

	Increase	Decrease
Source of Supply		$191,323.91
Pumping Expenses	$194,881.50	
Purification Expenses	539,707.32	
Transmission and Distribution Expenses	554,891.77	
Customer Accounts-Expenses	152,528.62	
Administrative and General	1,640,697.17	
*Municipal Taxes, Comparison	307,308.66	
Miscellaneous Expenses	45,135.89	
Taxes Actual	23,538.64	
Provision for Depreciation	47,267.00	
Standby Charge & Purchase of Water	2,350,000.00	
	$5,855,956.57	$191,323.91
Net Increase		5,664,632.66
TOTALS	$5,855,956.57	$5,855,956.57

*Water delivered to Municipal Departments offset by taxes.

An analysis of Revenue and Operating Expenses is shown in the following Exhibits "A" through "E."

T E N T A T I V E
PUBLIC UTILITIES COMMISSION
SAN FRANCISCO WATER DEPARTMENT

EXHIBIT "A"
BALANCE SHEET
JUNE 30, 1980

ASSETS AND OTHER DEBITS				LIABILITIES AND OTHER CREDITS			
UTILITY PLANT				**LONG TERM DEBT**			
Water Plant in Service	$ 255,670,881.00			Bonds (See Schedule 5)		$	39,375,396.00
Less Reserve for Depreciation	88,518,928.00	$167,151,953.00		**CURRENT AND ACCRUED LIABILITIES**			
Construction Work in Progress:							
Water Department	1,045,082.13			Customers' Deposits	$ 126,771.38		
1961 Bond Fund				Accounts Payable (See Schedule 6)	1,821,525.91		
1972 Bond Fund	6,486,700.28	7,531,782.41		Interfund Accounts Payable (See Schedule 7)	1,142,909.58		
				Matured Long-Term Debt-1928 Bond	3,000.00		
TOTAL AND ACCRUED ASSETS			$174,683,735.41	Matured Long-Term Debt-1972 Bond	5,000.00		
				Matured Interest - 1972 Bond	38,327.50		
CURRENT AND ACCRUED ASSETS				Interest Accrued - 1928 Bond			
MAYOR Cash (See Schedule 1)		$ 26,463,220.18		Interest Accrued - 1961 Bond	168,450.47		
RS Accounts Receivable (See Schedule 2)	$ 3,992,121.38			Interest Accrued - 1972 Bond	211,710.09		
LJ Less Reserve for Uncollectible Accounts	75,477.40	3,916,643.98					
EJK Notes Receivable		9,220.51		TOTAL CURRENT AND ACCRUED LIABILITIES			3,517,694.93
HJG Interfund Accounts Receivable							
AS-2 (See Schedule 3)		730,637.16		**DEFERRED CREDITS**			
OLM Materials and Supplies		1,012,271.96					
PTM				Clearing Accounts	$ 58,558.17		
PW TOTAL CURRENT AND ACCRUED ASSETS			32,131,993.79	Suspense Credits			
UT. AUDIT				Advance for Construction	254,162.62		
STMT. **DEFERRED DEBITS**				Orders for Work - Cash Advances	295,294.85		
EXTRA-10				Orders for Work - Accounts Receivable			
DMY Work in Progress		$ 225,961.45		Orders for Work - Stock Manufacture			
Suspense Debits (See Schedule 4)		154,913.18		Rental Deposits and Payments made in advance	82,966.00		
PW:etf Encumbrances (Contra)				Utility Tax Billed	(586.58)		
12/08/80 Budget Allocations to Other Depts.				Sewer Service Charges Billed	(24,483.00)		
(See Schedule 10)				Industrial Waste Fee Billed			
TOTAL DEFERRED DEBITS			380,874.63	TOTAL DEFERRED CREDITS			665,912.06
				RESERVES			
				Injuries and Damage Reserves	$ 170,000.00		
				Reserve for Refunds:			
				Funded			
				Unfunded			
				Rserve for Contractors' Damage Claims	20,336.28		
				Reserve for Encumbrances (Contra)			
				TOTAL RESERVES			190,336.28
				CONTRIBUTIONS IN AID OF CONSTRUCTION			
				NET CAPITAL INVESTMENT (See details on Sheet 2)			163,447,264.56
TOTAL ASSETS AND OTHER DEBITS			$ 207,196,603.83	TOTAL LIABILITIES AND OTHER CREDITS			$207,196,603.83

T E N T A T I V E

PUBLIC UTILITIES COMMISSION
SAN FRANCISCO WATER DEPARTMENT

EXHIBIT "B"
NET CAPITAL INVESTMENT
JUNE 30, 1980

	1972 M.W.S. BOND FUND	1961 M.W.S. BOND FUND	SAN FRANCISCO WATER DEPARTMENT	TOTAL
NET CAPITAL INVESTMENT - JUNE 30, 1979	$ 21,144,756.74	$ (538,045.42)	$ 133,940,752.37	$154,547,463.69
ADD: Adjustment of Prior Years Surplus			536,181.67	536,181.67
Bond Sold				
Net Income for 12 months ending June 30, 1980			7,133,133.61	7,133,133.61
Completed Contracts Capitalized			1,474,619.92	1,474,619.92
Equipment Transfer				
Interest Capitalized by Bond Fund	1,001,200.58			1,001,200.58
Interest on Construction Work in Progress				
Transfer to Completed Contracts				
Contribution from 1961 Bond Fund-Hetch Hetchy		1,230,485.59		1,230,485.59
	$22,145,957.32	$ 692,440.17	$ 143,084,687.57	$165,923,085.06
DEDUCT: Book Value of Plant Appraisal - June 30, 1968				
Interest Capitalized by Bond Fund			1,001,200.58	1,001,200.58
Bonds Sold				
Completed Contracts Capitalized	1,473,704.48	915.44		1,474,619.92
Equipment Transfer				
Cancellation of Capitalizing Contract - Shown Above				
Allocated to General Fund				
Prepaid Interest				
NET CAPITAL INVESTMENT - JUNE 30, 1980	$20,672,252.84	$ 691,524.73	$ 142,083,486.99	$163,447,264.56

COMPOSITION OF NET CAPITAL INVESTMENT

INITIAL CAPITAL INVESTMENT - MARCH 3, 1930			
Amortization of Allocations (Spring Valley)	$ 4,152,652.24		
Valuation of Municipal Water Works	100,000.00		
	$ 4,252,652.24		
LESS: Additional Allowance for Depreciation - March 1, 1920 to March 3, 1930	2,327,916.67	$ 1,924,735.57	
Additions:			
Net Income - March 3, 1930 to June 30, 1980	171,676,148.57		
Miscellaneous and year to year adjustments	6,205,429.83		
Allocations from Hetch Hetchy Power Division	409,471.41		
Allocations from 1947 Hetch Hetchy Water Bond Fund	290,516.71	178,581,566.52	
Grant earned on Federal Public Works Project		2,358,987.60	
Book Value of Plant Appraisal - June 30, 1948		83,864.03	
Contribution from 1961 Bond Fund		6,694,485.59	$189,643,639.31
DEDUCTIONS:			
Allocated to General Fund		$ 19,172,457.24	
Allocated to Hetch Hetchy Water Supply		4,466,014.40	
Lands Allocated to City and County of San Francisco for Streets and/or Blvds		172,564.67	
Excess of adjusted book value of plant appraisal, December 31, 1937	1,990,474.91		
Excess of adjusted book value of plant appraisal, June 30, 1953	188,291.42		
Book Value of Plant Appraisal, June 30, 1958	89,383.93		
Book Value of Plant Appraisal, June 30, 1963	91,365.18		
Book Value of Plant Appraisal, June 30, 1968	25,823.00	2,385,338.44	26,196,374.75
NET CAPITAL INVESTMENT JUNE 30, 1980			$163,447,264.56

SAN FRANCISCO WATER DEPARTMENT
EXHIBIT "C"
COMPARATIVE INCOME STATEMENT
TWELVE MONTHS ENDING JUNE 30, 1980

TITLE	FISCAL YEAR 1979 - 1980	FISCAL YEAR 1978 - 1979	1979-1980 INCREASE (DECREASE)	MARCH 03, 1930 TO JUNE 30, 1980
OPERATING INCOME				
Sale of Water	$ 41,584,053.64	$ 35,153,900.98	$ 6,430,152.66	$ 803,595,334.70
OPERATING REVENUE DEDUCTIONS				
Operating Expenses	$ 21,856,226.36	$ 18,612,399.34	$ 3,243,827.02	$ 333,124,919.75
Purchase of Water	9,500,000.00	7,150,000.00	2,350,000.00	163,671,061.92
Depreciation	4,172,752.00	4,125,485.00	47,267.00	86,403,843.08
Taxes - Actual	860,966.90	837,428.26	23,538.64	38,197,579.92
TOTAL OPERATING REVENUE DEDUCTIONS	$36,389,945.26	$30,725,312.60	$ 5,664,632.66	$621,397,404.67
UTILITY OPERATING INCOME	5,194,108.38	4,428,588.38	765,520.00	182,197,930.03
OTHER INCOME	3,059,384.85	2,165,812.45	893,572.40	51,129,531.15
GROSS	8,253,493.23	6,594,400.83	1,659,092.40	233,327,461.18
INCOME DEDUCTIONS	1,120,359.62	1,245,413.52	(125,053.90)	61,651,312.61
INCOME TRANSFERRED TO NET CAPITAL INVESTMENT	$ 7,133,133.61	$ 5,348,987.31	$ 1,784,146.30	$171,676,148.57

House Rent	$ 5,086.38
Rents - Including Share Crops	1,412,717.38
Contractors' Damage Claims	71,751.47
Interest Revenue	294,538.51
Turn-on Fees	6,275.00
Fixed Asset Sales	1,001,710.77
Miscellaneous	235,482.00
Walnut Orchard	31,823.34
TOTAL OTHER INCOME	$3,059,384.85

Non-Operating Revenue Deductions	$ 148,482.38
Interest on Long-Term Debt	971,877.24
TOTAL INCOME DEDUCTIONS	$1,120,359.62

EXHIBIT "D"
SCHEDULE
JUNE 30, 1980

SCHEDULE 1

CASH

Water Operating	$ 11,005,359.57
Revolving Fund	30,000.00
Bond Interest Fund - 1972	43,326.00
Bond Redemption Fund - 1928 Issue	3,000.00
1961 M.W.S. Bond Fund	695,816.89
1972 M.W.S. Bond Fund	14,685,717.72
TOTAL CASH	$26,463,220.18

SCHEDULE 2

ACCOUNTS RECEIVABLE

Consumer's Accounts	$3,775,866.18
Consumer's Accounts - Back Billing	
Negotiable Paper Returned by Treasurer	14,313.49
Rents Receivable - Matured	166,437.36
Contractors' Damage Claims	20,336.28
Custom Work	15,168.07
Anti-Trust Action - Worthington Corp.	
Anti-Trust Action - Anaconda American Brass	
Utility User's Tax	
Sewer Service Charges	
State of California	
Miscellaneous	
TOTAL ACCOUNTS RECEIVABLE	$ 3,992,121.38

SCHEDULE 3

INTERFUND ACCOUNTS RECEIVABLE

Public Utilities Commission - General Office	
Airports Commission	$ 18,131.32
Hetch Hetchy Water and Power	9,337.10
Department of Public Works	641,751.81
Moscone Center	3,457.50
Municipal Railway	37,176.61
Controller	10,069.34
Public Utilities Commission - EDP	166.34
Fire Department	10,405.35
Miscellaneous	141.79
1961 Bond Fund	
1972 Bond Fund	
TOTAL INTERFUND ACCOUNTS RECEIVABLE	$ 730,637.16

SCHEDULE 4

SUSPENSE DEBITS

Custom Work - General (B.A.R.T.D.)	
Clearing Accounts	
Orders for Work - Accounts Receivable	$ 48,354.79
Orders for Work - Other Departments	106,242.73
Orders for Work - Stock Manufacture	315.66
Clearing Accounts - Equipment	
Other Debits	
TOTAL SUSPENSE DEBITS	$ 154,913.18

SCHEDULE 5

BONDS PAYABLE

1961 Municipal Water System Bond Fund	$15,325,396.00
1972 Municipal Water System Bond Fund	24,050,000.00
TOTAL BONDS PAYABLE	$39,375,396.00

SCHEDULE 6

ACCOUNTS PAYABLE:	WATER	
Taxes Payable	$ 668.84	
General Creditors	710,023.43	
Contract Payments Due	310,253.75	
Contract Retentions	42,918.42	
Payrolls	346,628.82	
Miscellaneous	100.99	
Warrants Outstanding		
M & S Inventory	41,845.81	$ 1,452,440.06
	1961 BOND FUND	
General Creditors		
Contract Payments Due		
Contract Retentions		
Warrants Outstanding		
	1972 BOND FUND	
General Creditors		
Contract Payments Due	$ 169,541.39	
Contract Retentions	199,544.46	369,085.85
Warrants Outstanding		
TOTAL ACCOUNTS PAYABLE		$1,821,525.91

EXHIBIT "D"
SCHEDULE
JUNE 30, 1980

SCHEDULE 7

INTERFUND ACCOUNTS PAYABLE	WATER
Hetch Hetchy - Purchase of Water	
Public Utilities Commission - General Office	$ 330,583.74
Public Utilities Commission - DPC	187,037.80
Bureau of Light, Heat and Power	394,366.74
Retirement	54,360.56
Social Security	15,903.87
Health Service	5,859.60
Controller	8,905.00
Purchaser	45,918.83
Compensation	29,814.05
Hetch Hetchy Water and Power	61.74
Unemployment Insurance	2,663.11
City Attorney	51,000.00
1961 Municipal Water System Bond Fund	
Recreation and Park	500.00
Dept. of Public Works	3,938.71
Real Estate	11,995.83
1972 BOND FUND	
Hetch Hetchy	
TOTAL INTERFUND ACCOUNTS PAYABLE	$1,142,909.58

SCHEDULE 8

INTRAFUND ACCOUNTS RECEIVABLE

San Francisco Water Department	$ 137,388.04
1961 Municipal Water System Bond Fund	
1972 Municipal Water System Bond Fund	857.18
TOTAL INTRAFUND ACCOUNTS RECEIVABLE	$ 138,245.22

SCHEDULE 9

INTRAFUND ACCOUNTS PAYABLE

San Francisco Water Department	$ 2,016.57
1961 Municipal Water System Bond Fund	4,292.16
1972 Municipal Water System Bond Fund	131,936.49
TOTAL INTRAFUND ACCOUNTS PAYABLE	$ 138,245.22

SCEHDULE 10

BUDGET ALLOCATIONS TO OTHER DEPARTMENTS:

Hetch Hetchy Water and Power	
Public Utilities Commission - General Office	
Official Advertising	
Bureau of Light, Heat and Power	
Retirement	
Social Security	
Health Service	
Service of the Controller	
Service of the Purchaser	
Compensation Insurance	
TOTAL BUDGET ALLOCATION TO OTHER DEPARTMENTS	$ -0-

TENTATIVE
PUBLIC UTILITIES COMMISSION
SAN FRANCISCO WATER DEPARTMENT

EXHIBIT "E"
COMPARATIVE INCOME STATEMENT
JUNE 30, 1980

TITLE		FISCAL YEAR 1979 - 1980	FISCAL YEAR 1978 - 1979	1979 - 1980 INCREASE (DECREASE)	MARCH 3, 1930 TO JUNE 30, 1980
OPERATING INCOME					
SALE OF WATER:					
Water Sales - San Francisco		$18,208,681.49	$15,194,732.75	$3,013,948.74	
Water Sales - Outside San Francisco		20,578,629.51	17,503,785.98	3,074,843.53	
Water Sales - Municipal Departments - Paying		175,137.32	142,033.59	33,103.73	
Water Sales - Municipal Departments - Non-Paying		2,621,605.32	2,313,348.66	308,256.66	
TOTAL WATER SALES		$41,584,053.64	$35,153,900.98	$6,430,152.66	$803,595,334.70
OPERATING REVENUE DEDUCTIONS					
SOURCE OF SUPPLY:					
Operation, Supervision and Engineering	701	$ -0-	$ 2,824.17	$ (2,824.17)	
Operation, Labor and Expense	702	1,152,779.49	1,344,271.16	(191,491.67)	
Miscellaneous Expenses	703	1,506.04	1,264.39	241.65	
Purchased Water	704	-0-	-0-	-0-	
Maintenance Supervision and Engineering	706	19,577.98	9,866.27	9,711.71	
Maintenance of Structure and Improvements	707	108,996.07	90,524.48	18,471.59	
Maintenance of Collection and Impounding Reservoirs	708	415,491.62	400,796.19	14,695.43	
Maintenance of Lake, River and Other Intakes	709	-0-	332.68	(332.68)	
Maintenance of Springs and Tunnels	710	999.38	798.04	201.34	
Maintenance of Wells	711	1,539.63	852.81	686.82	
Maintenance of Supply Mains	712	37,784.16	78,425.12	(40,640.96)	
Maintenance of Other source of Supply Plant	713	68.26	-0-	68.26	
Hydrography	718	275.88	387.11	(111.23)	
TOTAL SOURCE OF SUPPLY EXPENSES		$ 1,739,018.51	$1,930,342.42	$ (191,323.91)	$ 35,698,577.50
PUMPING EXPENSES					
Pumping Labor and Expenses	724	$ 810,358.90	$ 635,287.89	$ 175,071.01	
Miscellaneous Supplies and Expenses	725	930.46	2,405.46	(1,475.00)	
Fuel or Power Purchased for Pumping	726	676,010.24	737,661.89	(61,651.65)	
Maintenance, Supervision and Engineering	729	196.42	-0-	196.42	
Maintenance, of Structures and Improvements	730	6,446.30	21,737.12	(15,290.82)	
Maintenance of Primary Pumping Equipment	731	-0-	811.06	(811.06)	
Maintenance of Pumbing Equipment	732	266,110.31	167,005.27	99,105.04	
Gardening	734	4,252.76	4,515.20	(262.44)	
TOTAL PUMPING EXPENSES		$ 1,764,305.39	$1,569,423.89	$ 194,881.50	$ 21,970,290.65
PURIFICATION EXPENSE ACCOUNTS					
Operation, Supervision and Engineering	741	$ 156,695.78	$ 144,129.20	$ 12,566.58	
Operation, Labor, and Expenses	742	1,341,792.69	1,229,595.24	112,197.45	
Miscellaneous Expenses	743	2,833.21	1,792.11	1,041.10	
Supplies and Expenses	744	913,944.70	570,608.12	343,336.58	
Maintenance, Supervision and Engineering	746	649.04	56.00	593.04	
Maintenance of Structures and Improvements	747	134,707.26	76,925.43	57,781.83	
Maintenance of Water Treatment Equipment	748	31,068.30	18,877.56	12,190.74	
TOTAL PURIFICATION EXPENSES		$ 2,581,690.98	$2,041,983.66	$ 539,707.32	$ 24,542,184.46

EXHIBIT "E" (CONT'D)
COMPARATIVE INCOME STATEMENT
JUNE 30, 1980

TITLE		FISCAL YEAR 1979 - 1980	FISCAL YEAR 1978 - 1979	1979 - 1980 INCREASE (DECREASE)	MARCH 3, 1930 TO JUNE 30, 1980
OPERATING REVENUE DEDUCTIONS (CONT')					
TRANSMISSION AND DISTRIBUTION ACCOUNT					
Operation, Supervision, and Engineering	751	$333,449.07	$315,297.36	$18,151.71	
Storage Facilities Expenses	752	650.98	8,049.26	(7,398.28)	
Transmission and Distribution Lines Expenses	753	264,680.48	135,009.46	129,671.02	
Meter Expenses	754	423,076.51	384,580.77	38,495.74	
Customer Installation Expenses	755	30,372.96	57,293.44	(26,920.48)	
Miscellaneous	756	15,061.31	19,870.70	(4,809.39)	
Operating Expenses - City Yard	757	347,218.49	380,608.06	(33,389.57)	
Maintenance, Supervision and Engineering	758	486.21	437.36	48.85	
Maintenance of Structures and Improvements	759	255,561.00	219,772.93	35,788.07	
Maintenance of Reservoirs and Tanks	760	63,677.99	85,261.94	(21,583.95)	
Maintenance of Transmission Lines and Canals	761	144,715.98	103,765.43	40,950.55	
Pipeline Electrolysis	762	21,552.80	45,129.92	(23,577.12)	
Maintenance of Services	763	1,210,115.07	707,819.54	502,295.53	
Maintenance of Miscellaneous Plant	766	201,708.87	201,065.41	643.46	
Maintenance of Distribution Mains, Canals, etc.	767	1,395,931.86	1,482,557.72	(86,625.86)	
Reconditioning of Salvaged Materials	768	-0-	-0-	-0-	
Recoverable Claims - Mains and Services	769	48,273.57	55,122.08	(6,848.51)	
TOTAL TRANSMISSION & DISTRIBUTION ACCOUNTS		$4,756,533.15	$ 4,201,641.38	$ 554,891.77	$90,142,416.92
CUSTOMER'S ACCOUNTS EXPENSES					
Meter Reading Expenses	772	$ 267,057.66	$ 256,242.08	$ 10,815.58	
Customer Records and Collection Expenses	773	291,457.48	276,882.37	14,575.11	
Miscellaneous Customer Accounts Expenses	774	317,652.00	300,096.61	17,555.39	
Inspection and Service	775	698,971.57	665,805.26	33,166.31	
Bookeeping Department	776	213,746.03	148,851.81	64,894.22	
Shipping	777	55,829.58	44,307.57	11,522.01	
TOTAL CUSTOMER'S ACCOUNTS EXPENSES		$1,844,714.32	$ 1,692,185.70	$ 152,528.62	$36,079,814.30
ADMINISTRATIVE AND GENERAL					
Salaries - General Officers	780	$ 68,852.35	$ 41,742.00	$ 27,110.35	
Salaries - General Office	781	437,452.86	301,592.12	135,860.74	
General Engineering	782	765,892.72	711,190.86	54,701.86	
Resources and Planning	783	22,661.38	100,419.60	(77,758.22)	
Office Supplies and other Expenses	784	44,334.58	34,762.47	9,572.11	
Telephone Service	785	118,445.29	125,086.71	(6,641.42)	
Mason Street Operating Expenses	786	149,274.00	150,494.04	(1,220.04)	
Municipal Taxes - Comparison	787	2,621,605.32	2,314,296.66	307,308.66	
Outside Services Employed	788	20,892.20	(3,146.25)	24,038.45	
Insurance - Compensation	789	490,431.39	467,133.91	23,297.48	
Insurance - Other	790	41,307.96	21,190.85	20,117.11	
Injuries and Damages	791	220,568.54	(232,469.41)	453,037.95	
Pensions	792	1,725,655.02	1,246,812.27	478,842.75	
Social Security	793	534,637.94	419,366.03	115,271.91	
Electronic Data Processing	794	835,267.69	616,257.67	219,010.02	
Public Utilities Commission	798	569,843.06	508,291.07	61,551.99	
Maintenance of Central Control System	804	19,029.39	15,895.61	3,133.78	
Maintenance to Telephone System	805	3,397.14	9,497.96	(6,100.82)	
Maintenance to 425 Mason Street Building	807	8,731.28	19,067.15	(10,335.87)	
Maintenance to Radio System	808	9,634.83	12,655.91	(3,021.08)	
Inventory Expense-Maintenance	809	84,984.56	17,071.95	67,912.61	
Maintenance of Non-Operative Property	810	1,419.56	9,709.96	(8,290.40)	
Miscellaneous Maintenance	819,806,811,812,813	250,692.43	190,086.52	60,605.91	
TOTAL ADMINISTRATION AND GENERAL EXPENSES		$9,045,011.49	$7,097,005.66	$1,948,005.83	$121,967,881.19

TENTATIVE

PUBLIC UTILITIES COMMISSION
SAN FRANCISCO WATER DEPARTMENT

EXHIBIT "E" (CONT'D)
COMPARATIVE INCOME STATEMENT
JUNE 30, 1980

TITLE		FISCAL YEAR 1979 - 1980	FISCAL YEAR 1978 - 1979	1979 - 1980 INCREASE (DECREASE)	MARCH 3, 1930 TO JUNE 30, 1980
OPERATING REVENUE DEDUCTIONS (CONT'D.)					
MISCELLANEOUS EXPENSES					
Uncollectible Water Bills	814	$ 124,952.52	$ 79,518.17	$ 45,434.35	
Provision for Contingent Funds	815	-0-	-0-	-0-	
Cal-Osha Compliance Expense	818	-0-	298.46	(298.46)	
TOTAL MISCELLANEOUS EXPENSES		$ 124,952.52	$ 79,816.63	$ 45,135.89	$2,723,754.73
TOTAL OPERATING REVENUE DEDUCTIONS		$21,856,226.36	$18,612,399.34	$3,243,827.02	$333,124,919.75
OPERATING EXPENSES					
Purchase of Water	502.1	$9,500,000.00	$ 7,150,000.00	$2,350,000.00	
Depreciation	503	4,172,752.00	4,125,485.00	47,267.00	
Taxes-Actual	507	860,966.90	837,428.26	23,538.64	
TOTAL OPERATING EXPENSES		$14,533,718.90	$12,112,913.26	$2,420,805.64	$288,272,484.92
TOTAL OPERATING REVENUE DEDUCTIONS & OPERATING EXPENSES		$36,389,945.26	$30,725,312.60	$5,664,632.66	$621,397,404.67
UTILITY OPERATING INCOME		$ 5,194,108.38	$ 4,428,588.38	$ 765,520.00	$182,197,930.03
OTHER INCOME					
Rentals, including Crops Shares	521	$ 1,448,027.54	$ 1,130,971.40	$ 317,056.14	
Walnut Orchard Sales	526	31,823.34	38,575.63	(6,752.29)	
Miscellaneous	526	283,284.69	626,369.42	(343,084.73)	
Interest Earned	524	294,538.51	284,754.95	9,783.56	
Sales of Real Estate and Fixed Assets	526	1,001,710.77	85,141.05	916,569.72	
TOTAL OTHER INCOME		$ 3,059,384.85	$ 2,165,812.45	$ 893,572.40	$ 51,129,531.15
GROSS INCOME		$ 8,253,493.23	$ 6,594,400.83	$ 1,659,092.40	$233,327,461.18
INCOME DEDUCTIONS					
Agricultural Division	850-854	$ 148,482.38	$ 236,467.79	(87,985.41)	
Interest on Long-Term Debt	530	971,877.24	1,008,945.73	$ (37,068.49)	
TOTAL INCOME DEDUCTIONS		$ 1,120,359.62	$ 1,245,413.52	$ (125,053.90)	$ 61,651,312.61
NET INCOME TRANSFERRED TO NET CAPITAL INVESTMENT		$ 7,133,133.61	$ 5,348,987.31	$ 1,784,146.30	$171,676,148.57

BOND REDEMPTION AND INTEREST

WATER DEPARTMENT

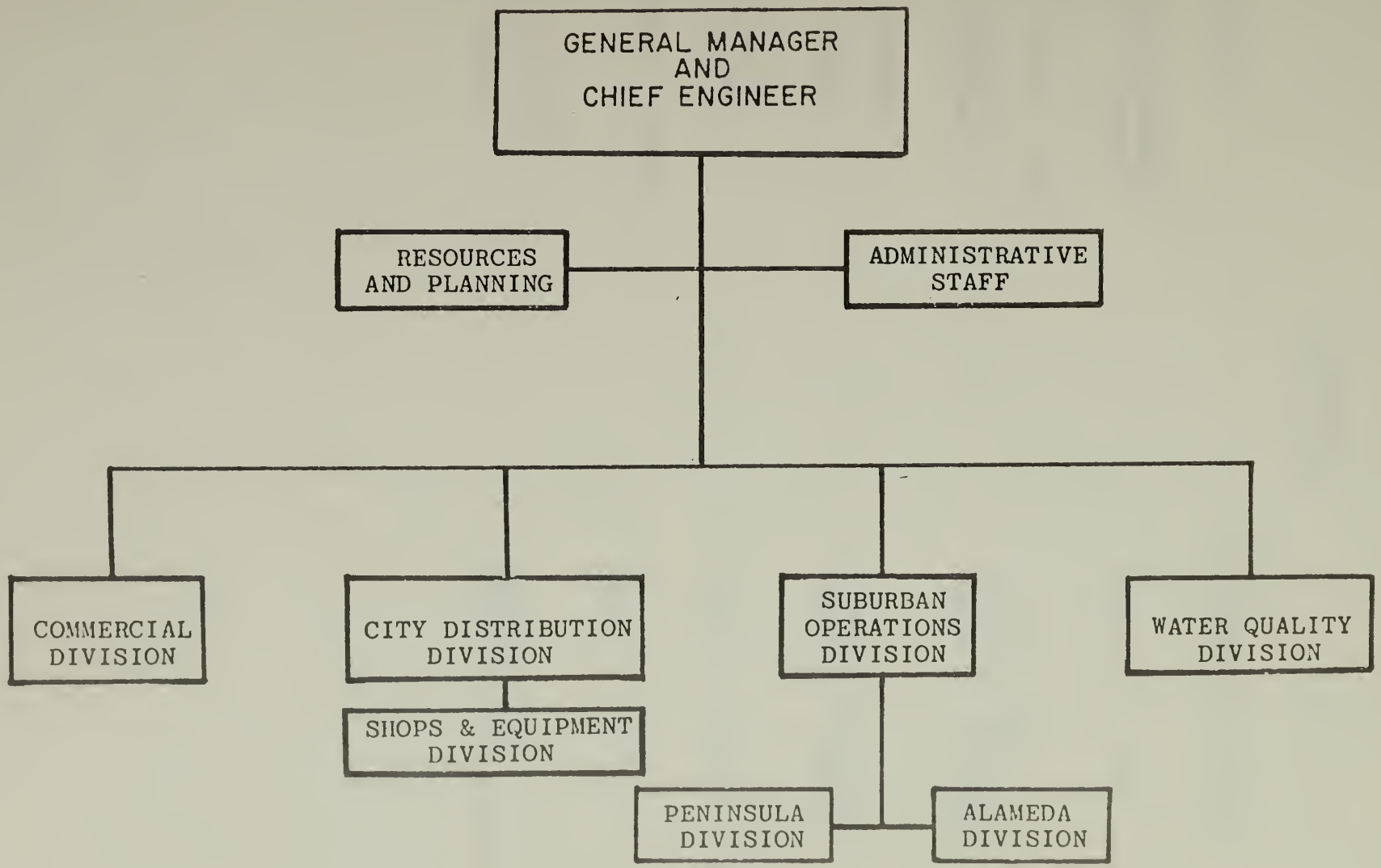
FISCAL YEAR	REDEMPTION			INTEREST			TOTAL REDEMPTION PLUS INTEREST
	MUNI WATER		SYSTEM	MUNI WATER		SYSTEM	
	1961	1972	TOTAL	1961	1972	TOTAL	
1978-79	$ 2,691,370	$ 695,000	$ 3,386,370	$ 717,797	$ 972,330	$ 1,690,127	$ 5,076,497
1979-80	2,691,374	845,000	3,536,374	627,064	1,378,339	2,005,403	5,541,777
1980-81	2,691,370	1,045,000	3,736,370	536,012	1,321,414	1,857,426	5,593,796
1981-82	2,691,374	1,060,000	3,751,374	444,737	1,257,501	1,702,238	5,453,612
1982-83	2,451,375	1,070,000	3,521,375	352,868	1,192,776	1,545,644	5,067,019
1983-84	1,563,397	1,085,000	2,648,397	268,066	1,127,239	1,395,305	4,043,702
1984-85	1,563,396	1,100,000	2,663,396	208,524	1,060,726	1,269,250	3,932,646
1985-86	1,477,686	1,115,000	2,592,686	149,899	993,989	1,143,888	3,736,574
1986-87	1,196,546	1,130,000	2,326,546	106,612	928,946	1,035,558	3,362,104
1987-88	586,561	1,145,000	1,731,561	79,394	862,179	941,573	2,673,134
1988-89	390,848	1,160,000	1,550,848	52,665	793,991	846,656	2,397,504
1989-90	267,423	1,205,000	1,472,423	34,124	725,169	759,293	2,231,716
1990-91	267,423	1,350,000	1,617,423	21,130	653,253	674,383	2,291,806
1991-92	119,998	1,405,000	1,524,998	8,136	576,978	585,114	2,110,112
1992-93	47,999	1,455,000	1,502,999	2,448	497,348	499,796	2,002,795
1993-94	-0-	1,270,000	1,270,000	-0-	420,555	420,555	1,690,555
1994-95	-0-	1,665,000	1,665,000	-0-	337,148	337,148	2,002,148
1995-96	-0-	1,115,000	1,115,000	-0-	252,459	252,459	1,367,459
1996-97	-0-	1,220,000	1,220,000	-0-	189,212	189,212	1,409,212
1997-98	-0-	1,285,000	1,285,000	-0-	124,985	124,985	1,409,985
1998-99	-0-	1,340,000	1,340,000	-0-	65,725	65,725	1,405,725
1999-2000	-0-	830,000	830,000	-0-	18,675	18,675	848,675
	$20,698,140	$25,590,000	$46,288,140	$3,609,476	$15,750,937	$19,360,413	$65,648,553

ORIGINAL AMOUNT AND INTEREST RATE

$47,999,000	$27,925,000
2-1/4 to 6%	4% to 6.5%

ORGANIZATION AND PERSONNEL

CITY AND COUNTY OF SAN FRANCISCO
PUBLIC UTILITIES COMMISSION
SAN FRANCISCO WATER DEPARTMENT
ORGANIZATION CHART



PERSONNEL

General Manager	Eugene J. Kelleher
RESOURCES AND PLANNING	
Senior Civil Engineer	Raymond F. Quan
CITY DISTRIBUTION DIVISION	
Manager	John E. Kenck
Assistant Manager	George Y. Nakagaki
Shop Superintendent	Edmund A. Brodie
SUBURBAN DIVISION	
Manager	Gilbert G. Bendix
Assistant Manager	Edward L. Fonseca
ALAMEDA DIVISION	
Assistant Manager	Tandy W. Carter
WATER QUALITY DIVISION	
Manager	Harry W. Tracy
COMMERCIAL DIVISION	
Manager	John Mullane
Assistant Manager	Robert A. Vasconcellos